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Art-science collaboration in Earth observation: GROW Observatory art residency and commission Drew Hemment, Kasia Molga, Robin Rimbaud, Feimatta Conteh

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GROW Observatory is a Horizon 2020 project that is empowering citizens to collect data on selected soil parameters at an unprecedented scale. Its ambition is to underpin smart and sustainable custodianship of land and soil, and to contribute to validation of soil moisture retrieval by Sentinel-1 satellites. Central to the mission of the Observatory is therefore to create meaning and relevance for citizens, policy makers and businesses in Earth observation data and science. This has resulted in novel work in data visualisation, online storytelling, online social learning, service innovation, and an artist residency and commissioned artwork.

During 2018, artists Kasia Molga and Scanner undertook an artist residency on the GROW project in association EC Vertigo STARTS. The GROW project developed a collaborative relationship with these artists who brought artistic curiosity and enquiry around project themes, science, technology and data, and translated concepts and data into experiences and tangible forms. The residency formed a part of ongoing research by the Coordinator of GROW, Drew Hemment, on the affordance of art in science and technology innovation (Hemment et al., 2017).

The objectives for the artwork commissioned through the residency are to:
1. Offer imaginative ways to engage the public in envisioning the future of soils, growing, satellites, sensing and citizen science.
2. Reframe or bring a new perspective or way to look at the GROW project concept.
3. Help to question and explore the meaning and relevance of scientific information.
4. Bring artistic experimentation in data, code, tools and/or concept to the GROW project.
5. Bridge and translate between the concerns and language of scientists, citizens and policymakers.

One of the resulting artworks, By the Code of Soil, was launched as a part of World Soils Day 2018. It entails an application for personal computers which creates a unique audio-visual rendition of soil moisture, texture, temperature and light data from the cluster of GROW sensors in closest proximity to the user. The artwork is displayed when triggered by the transition of Sentinel-1a overhead. This means it is live twice in each 24 hour period, encouraging people to reflect on the instrumentation of Earth observation. The artwork also represents soil's dynamic nature, the sound and visuals transforming to reflect the changing soil condition. The artists chose to highlight the way in which the condition of soils is dictated by many factors which are beyond human volition. In representing the crowd-sourced GROW data, the artistic work was the first implementation of the GROW data platform, and as such contributed to innovation in the Horizon 2020 project.

This presentation is a reflection on the art-science collaboration in GROW Observatory by the scientific and artistic participants.

References

Hemment, D., Bletcher, J. and Coulson. S. (2017). Art, creativity and civic participation in IoT and Smart City innovation through Open Prototyping. Creativity World Forum 2017. Aarhus, Denmark. November 1-2.